Thrust and pressure ,Fluid pressure, Archimedes' principle, Uses of Archimedes' principle

CLASS-IX

SUBJECT : PHYSICS
CHAPTER NUMBER: 10
CHAPTER NAME : GRAVITATION

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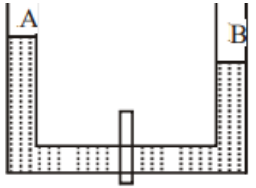
NUMERICALS

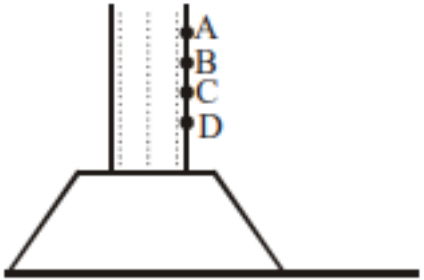
1. Find pressure due to water at a depth 2m inside it (Given density of water = 1 g/ cm^3 = 1000 kg/ m^3)

2. A circular pillar of area of cross section 6 × 10^{-3} m^2 supports a weight of 60 kg calculate the pressure exerted on the pillar.

3. (a) The levels of water, in the two arms of A & B of a U-tube, are shown in the diagram. A valve is put in between the two arms. State the direction of flow of water, when this valve is removed, and give the reason for the same.



(b) From which hole water travels, the largest distance? Why?



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QUESTIONS

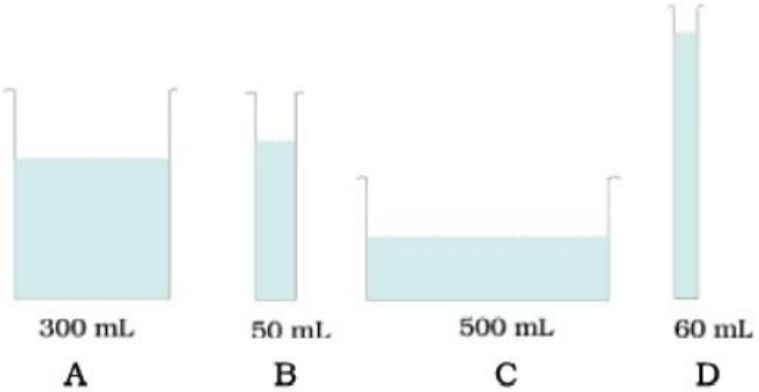
The pressure of the water at the surface of the pond is _____ that at the bottom of the pond.

(a) Lower than
(b) Higher than
(c) Same as
(d) Either lower or Higher than

Which is not the factor affecting fluid pressure?

(a) Height of fluid
(b) Density of fluid
(c) Color of fluid
(d) Acceleration due to gravity

Observe the vessels A,B,C,D carefully
Arrange them in the order of decreasing pressure at the bottom of the container.



QUESTIONS

1. A force of 16 N acts on an area of 50 cm^2 . What is the pressure in pascal?

a) 3200 Pa
b) 4200 Pa
c) 5200 Pa
d) 2200 Pa

2. What force will produce a pressure of 50000 Pa on an area of 0.2m^2

a) 10000 N
b) 5000 N
c) 15000 N
d) 20000 N

3. A force of 300 N, while acting on an area A, produces a pressure of 1500 Pa. What is the magnitude of A in cm^2 .

a) 1000 cm^2
b) 3000 cm^2
c) 4000 cm^2
d) 50000 cm^2

Home Assignment

1. Some piece of impurity (density = ρ) is embedded in ice. The ice is floating in water. (density = ρ_w) When ice melts, level of water will –

(1) fall if $\rho > \rho_w$ (2) remain unchanged, if $\rho < \rho_w$ (3) fall if $\rho < \rho_w$ (4) rise if $\rho > \rho_w$

2. **Each question contains STATEMENT-1 (Assertion) and STATEMENT-2 (Reason). Each question has 5 choices (1), (2), (3), (4) and (5) out of which ONLY ONE is correct.**

(1) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1.
(2) Statement-1 is True, Statement-2 is True; Statement-2 is not a correct explanation for Statement-1.
(3) Statement -1 is True, Statement-2 is False.
(4) Statement -1 is False, Statement-2 is True.
(5) Statement -1 is False, Statement-2 is False.

Statement 1 : A man sitting in a boat which is floating on a pond. If the man drinks some water from the pond the level of the water in the pond decreases.

Statement 2 : According to Archimede's principle the weight displaced by body is equal to the weight of the body.

Statement 1 : A needle place carefully on the surface of water may float, whereas a ball of the same materia will always sink.

Statement 2 : The buoyancy of an object depends both on the material and shape of the object.

THANKING YOU

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